ANDREYEV, V.N.; VIL'NER, D.G.

Use of old horizontal control materials. Geod. i kart. no. 3:50-51
Mr '61.

(Aerial photogrammetry)

AUTHOR:

Vil'ner, D. G., Engineer of the

sov/6-58-9-15/26

Sverdlovsk AGP

TITLE:

On the Problem of the Revision of Maps (K voprosu ob

obnovlenii kart)

PERIODICAL:

Geodeziya i kartografiya, 1958, Nr 9, pp 69 - 70 (USSR)

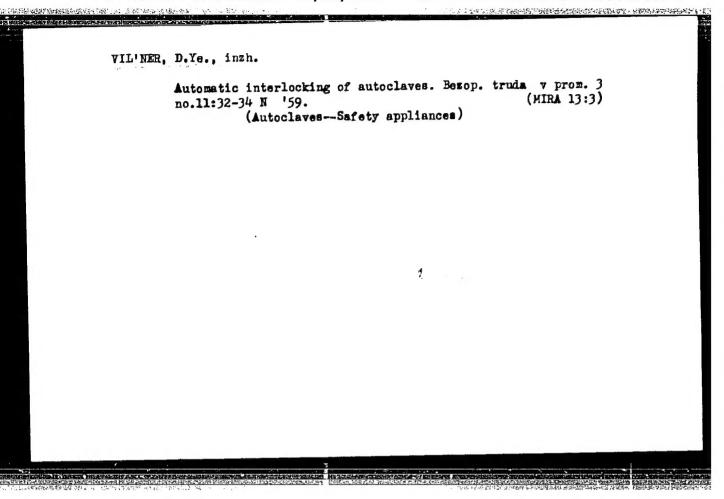
ABSTRACT:

This is a letter to the editor. The following rules are laid down for the revision of maps: 1) Maps are

to be reprinted in smaller editions, but using systematic methods of compilation. 2) The information required for the revision of maps must be made available by all institutions and authorities to the work of which alterations of geographical features are due. 3) On the basis of this information a diary is to be kept.
4) New flights will considerably reduce the amount of revision work to be done. 5) It will be expedient either to establish special departments in the Aerial Surveying Authorities, which are closely associated with the

Gosgeonadzor (State Surveying Inspection) or to transfer the functions of the latter institution to the Aerial

Card 1/2

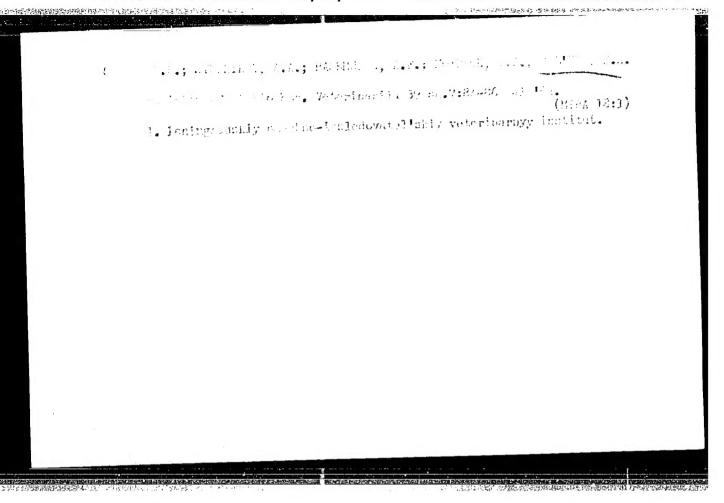


GUSEV, V.F.; STUPRIKOV, A.A.; BACHMUREN, A.F.; MOTRICH, T.A.; VIL'NER, E.A.

Response to our opponents. Veterinarila Al no.12:70-72 D '64.

(MIRA 18:9)

1. Leningradskiy nauchno-issledovatel skiy veterinarnyy institut.



GUSEV, V. F., STUPNIKOV, A. A., BASHMURIN, A. F., MOTRICH, T. A. and VIL'NER, E. A. (Leningrad Scientific Research Veterinary Institute)

"Concerning the problem of toxicity of dithiophos"

Veterinariya, vol. 39, no. 7, July 1962 pp. 84

VILNIK, (=)

25(5)

PHASE I BOOK EXPLOITATION

SOV/2100

- Musyakov, Leonid Abramovich, Girsh Solomonovich Vil'ner, and Anatoliy Vasil'yevich Yastrebov
- Avtomatizatsiya kak sredstvo ozdorovleniya usloviy truda (Improved Working Conditions Through Automation) [Moscow] Profizdat, 1958. 71 p. 5,000 copies printed.
- Ed.: I.S. Denisova; Tech. Ed.: A.A. Golichenkova.
- PURPOSE: This booklet is intended for personnel responsible for safety engineering.
- COVERAGE: The booklet describes simple mechanization and automatization methods, that if used by individual plants may significantly reduce working hazards in casting, cutting, and forming metals and processing chemicals. Examples showing instrumentation of machine tools and other equipment with various feeders, loaders, and other safety devices are included. No personalities are mentioned.

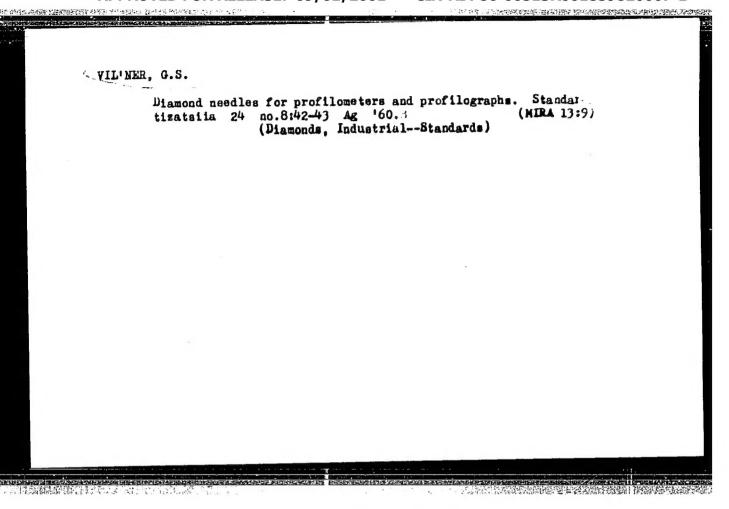
Card 1/2

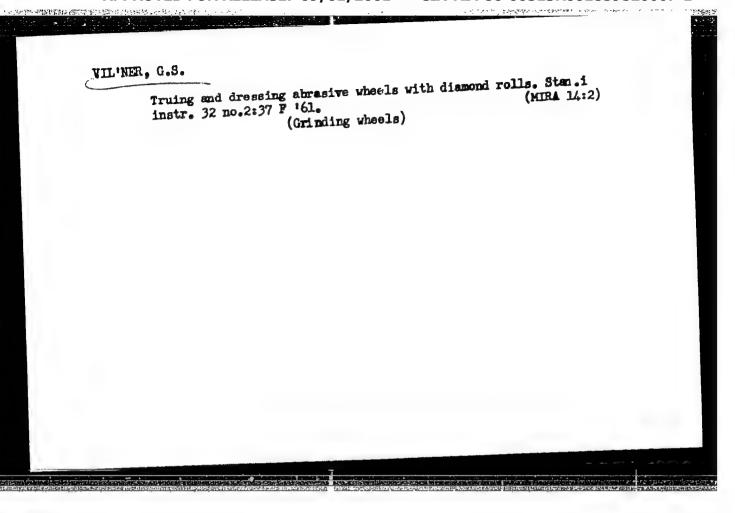
Improved Working Conditions Through Automation	SOV/2100
There are no references.	
TABLE OF CONTENTS:	
Introduction	3
Automatization of Hazardous and Labor Consuming Jobs	8
Automatization of Dangerous Jobs	31
Automatization of Transport Operations	55
AVAILABLE: Library of Congress (TJ213.M83)	
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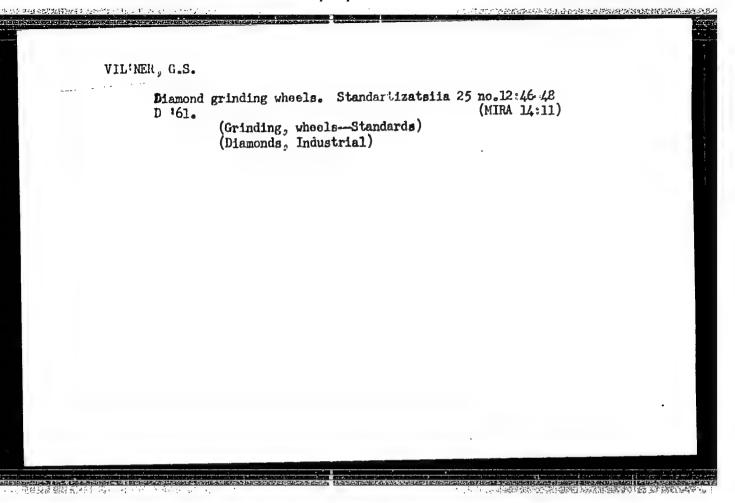
THE RESERVED FOR FLUID OF WILDER STREET

MUSYAKOV, Leonid Abramovich; VIL'NER, Girsh Solomonovich; YASTREBOV, Anatoliy Vasil'yevich; DENISOVA, I.S., red.; GOLICHERKOVA, A.A., tekhn.red.

[Automatization as a means of improving working conditions]
Avtomatizateiia kak sredstvo ozdorovleniia uslovii truda.
Izd-vo VTsSPS Profizdat, 1958. 71 p. (MIRA 12:2)
(Automatic control)







"一个一句,不可以是你有什么一个人,你就不是这一种,我们就是我们的人,

SIMKIN, Yevel* Leybovich; VIL*NER, G.S., inzh., retsenzent;
RYCHIN, S.A., inzh., retsenzent; ANDREYEVA-GALANINA,
Ye.TS., prof., nauchn. red.; MISHKEVICH, G.I., red.

[Safety measures in working with pneumatic hand tools in shipbuilding] Tekhnika bezopasnosti pri rabote s ruchnym pneumaticheskim instrumentom v sudostroenii. Leningrad, Sudostroenie, 1964. 60 p. (MIRA 18:2)

VIL'NER, I.A.

P. I. Romanovskii's "Fourier series. Field theory.

Analytical and special functions. Laplace transform."

Reviewed by I. A. Vil'ner. Usp. mat. nauk 16 no.1:235-238

Ja-F '61. (MIRA 14:6)

(Romanovskii, P.I.)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859820007-1"

计工作的 医原性性性结膜 化二氯对甲酰甲烷 医直肠丛外部 网络格勒斯斯马克

AUTHOR: Vil'ner, I.A. 307/42-13-4-4/11

TITLE: Topology and Geometry of the Space of an Imaginary Anamorphosis

(Topologiya i geometriya prostranstva mnimoy anamorfozy)

PERIODICAL: Uspekhi matematicheskikh nauk, 1958, Vol 13, Nr 4, pp 173-178 (USSR)

ABSTRACT: For imaginary nomograms in a complex projective plane of four

dimensions the author gives a real practically realizable interpretation. Eleven theorems and several definitions and conclusions are formulated. The author partially uses own not

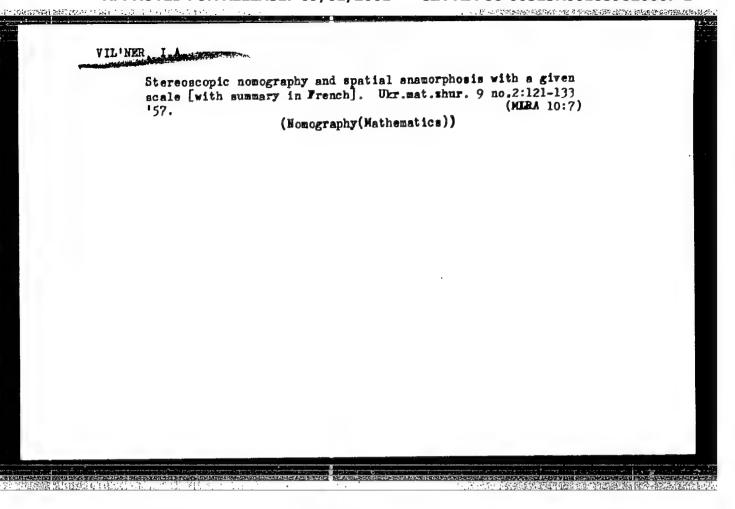
generally usual notations introduced in earlier papers.

There are 6 references, 5 of which are Soviet, and 1 German.

SUBMITTED: January 23, 1956

Card 1/1

VIL NER, I A.	
Call Nr: AF Transactions of the Third All-union Mathematical Congress *(Jun-Jul '56, Trudy '56, V. 1, Secs. Rpts., Izdatel'stvo AN SSSR, Moscow Vasil'yev, A. M. (Moscow). On Dependence Between Differential-geometric Properties.	Cont. Magazay
Vedernikov, V. I. (Voronezh). Conformal Superposition of Surfaces.	144-145
Mention is made of Norden, A. P.	
Verbitskiy, L. L. (Nikolayev). Conformal-Euclidean Metric of V _n in E _{n+1} . Anamorphosis Problem and/ Vil'ner, I. A. (Moscow). Nomographic Interpretation of	145
Complex Variable Functions.	145-146
Vil'ner, I. A. (Moscow). Nomographing Functions of Many Variables Based on the Method of Adjusted Points.	146
Volkov, Yu. A. (Leningrad). On the Existence of Convex Surfaces With Given Metric.	146
Mention is made of Aleksandrov, A. D. Card 47/80	



VIL'NER, I.A.

Nomographic approximation of elliptic functions and nomograms in complex projective planes. Vych.mat. no.7:3-74 '61.

(MIRA 15:4)

(Nomography (Mathematics)) (Functions, Elliptic) (Geometry, Projective)

"APPROVED FOR RELEASE: 09/01/2001

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phy of enalytic functions. Doklady S 63 79 107 TOTAL Russian Continuity to so do Sopro Ally Vert New SSSR 1 App. 33 th Meth No. 4 no. 2, 105 116 1940., C. R. (Williams, Johns, Ber. URSS (N.S., 53, 181-190 (1940); these Rev. 9, 534; 8, 494] of the conditions under which an analytic function F(z, w) = 0 can be represented by an alignment chart with two scales for z and two scales for w, the author introduces parameters K_{ii} (j=1, 2, 3, 4) and J_{ii} (j=1, 2, 3) depending on the first four derivatives of wwith respect to z. The representation in question is possible if and only if all of the K_n are real and constant. In that case all scales are curved if and only if K_0 and K_0 are both different from zero while if K_{1z} (or K_{4z}) only is zero w (or z) only has straight scales and finally if both $K_{\mathbf{tr}}$ and $K_{\mathbf{tr}}$ are zero all scales are straight. Canonical forms are given for F(z, w) = 0 if it can be nomographed as indicated. They take the form of the integral of the reciprocal of the square root of a linear function of the Weierstrass elliptic function. The invariants g2 and g3 are given in terms of the parameters Kn. Details of applying these results are to be given elsewhere. R. Church (Annapolis, Md.). Source: Eatherstical Reviews, 701 10 STREET STREET, STREET,

VIL'NER, I.A., kand.fiziko-matematicheskikh nauk

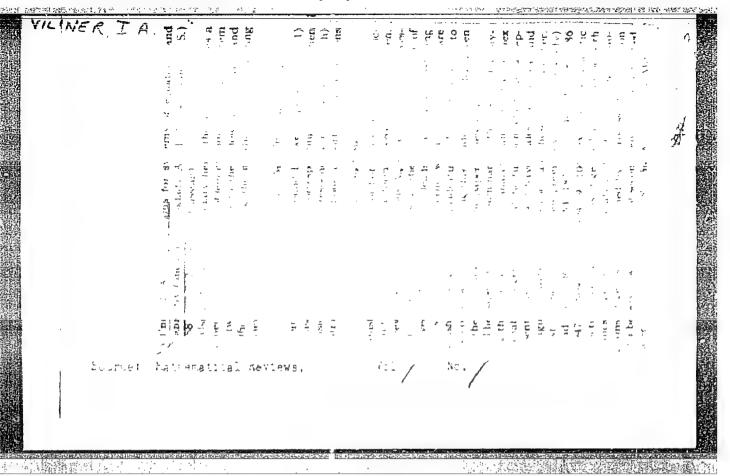
Nomogram for determining the excess of air during incomplete combustion of fuel. Teploenergetika 7 no.2:88-89 F '60. (MIRA 13:5)

1. Vsesoyusnyy zaochnyy politekhnicheskiy institut. (Combustion)

"APPROVED FOR RELEASE: 09/01/2001

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	CATTO.		ille book):	Willis This bonk is internal the specialists in the fivery of semples weights. It may also be used by alternal universay or sets withing, and specialists in other fields of melt. A	Warada an company of the company of		:	a Pacion	<u>Pris. B. A.</u> (Yasaw). Starsoprills Projecton in a hane of s-draples Variables and five of its Applications	Imper, V. E. (Swilberk). On the Characteristics of the Groth of lative Pastime of May Caples Tariables	Reveria, S. A. (Coppader). On Complete Systems and Bases in Space Wellingthe Prestices of Many Complex Variables	Dreeds, S. A. (Cryspany) On the Solutions of One type of Mrs. Stations Connected With Entire Practices of Two Complex Newtons.		Other, P. B., and L. M. Pellinii (heter-ma-hom). In Cartour Maying This Problem of the Thought Palms Problem of the Thouston and Assistant Palms Problem of the Thouston and Assistant Palms (Name). (Change of the Conformal Maying of a mailtained and the Conformal Maying of a mailtained	Memeration of a famous of the furtation of a famous Froille	. or mileri's	imen. R. B. (Trillet). On a Certain Application of Casthy-Type Milipia Trisgrals	Immola, N. V., Odzak). On Ome Techod of Constructing Fisce-Wise Smalfide Functions Competed with Filtration Theory	e of Class	macharidae, 3, 9, (Millsi). Approxime blucton of bounds:7 Min Products of the Imory of Ashirto Partions	mographic facerpretation Gauchy Procks	
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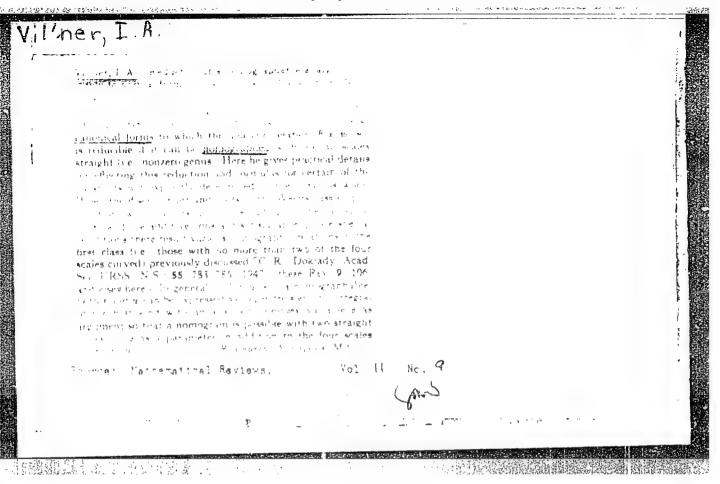
VILINER, Iosif A. (Moskva A-167, Aviatsionnyy per.10, kv. 27, SSSR); GALAYDA, Pavel [Galajda, Pavel]

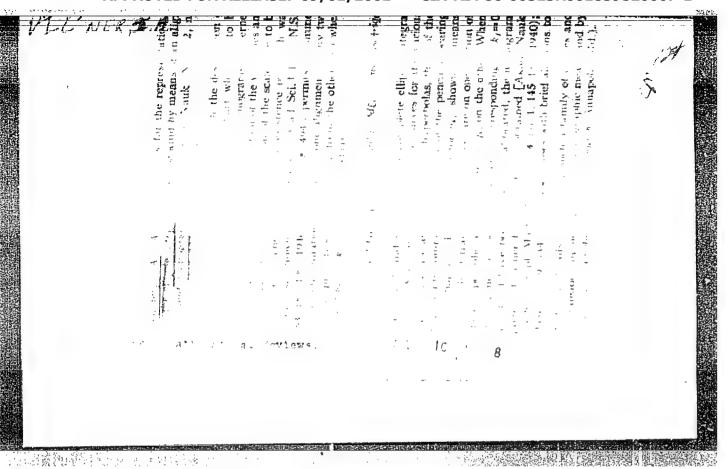
Nonelementary relations of the equations of the third nomographic order and their automorphic transformations. Mat fyz cas SAV 14 no.1:6-43 '64.

1. Department of Mathematics of the Faculty of Mechanical Engineering, Higher School of Technology, Kosice, Komenskeho 40 (for Galajda). Submitted March 1, 1963.

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859820007-1





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CIA-RDP86-00513R001859820007-1

9 of I A Analytical function of a complex variable of the first nomographic class and their nomograms. C. J. (Dowlady) Acad. Sci. J.Ress. (N.S.) 53, 187-190 F**, A to a small relationship F(w, z) = 0, where F is analytic and $a = p_1 + ip_2$, a = a + ib, is defined to belong to the first conneraphic classifit can be reduced to two real equations A the consolid form $f(p) \Lambda(a) + g(p) V(b) + h(p) = 0$, for 1. 1.2 I a such functions there exist nonnographs with oghi sedes for a ord b. The author gives a determination 17. If the transfers in terms of dementary functions and the content of the content of representations of these to the the till the Hanges of P. H. Ket Sam and the same 15.1 上於 经收货 医毛线后角 农种新兴政

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AUTHOR:

Vil'ner, I.A.

TITLE:

On nomographic approximation of elliptic functions and

nomograms in complex projective planes

SOURCE:

Akademiya nauk SSSR. Vychistitel nyy tsentr. Vychis-

litel'naya matematika, no. 7, 1961, 3 - 74

TEXT: The article consists of 2 chapters: I) Nomographic approximation of elliptic functions, and II) Nomograms in complex projective planes. Chapter I: A nomographic method is proposed for obtaining elementary approximations to elliptic functions. The theoretical aspect of the method was considered in earlier works by the author. The normalized elliptic integral of the first kind

$$W_{(1)} = \frac{k^{(1)}}{V_{i}} \int_{0}^{z} \frac{d}{V_{1-k^{2} \sin^{2} \epsilon}}$$
 (1.1)

is considered, where Card 1/10

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On nomographic approximation of ...

 $W_{(1)} = P_{(1)} + Q_{(1)}i$, $k^{(1)} = \frac{k}{/k/}$, z = a + bi, $i = \sqrt{-1}$.

The canonical representation of Eq. (1.1) is given by 2 jointly no-The canonical representation of $\frac{1}{2}$. The complex modulus mographable and vanishing Massot determinants. The complex modulus k describes a lemniscate. Let $m=1/k_1^2$ (k_1 being related to k).

The curves m = const, are drawn, and an exact nomograph is constructed for calculating elliptic functions and integrals. By a projection tive transformation of the first nomogram, one obtains another circular metrical one. It was found that the best nomogram for Eq. (1.1) (and in general for any analytic expression), is its exact nomogram. The latter not only facilitates the finding of a possible approximation, but can be also used for the construction of an approximate expression for Eq. (1.1). At present, there are no other means for nomographic approximation, except the exact nomograph. Let the function w = f(z) be holomorphic inside and on the boundary of the circle C of radius R. This function is expanded in a Taylor series. With n = 1, one obtains

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CIA-RDP86-00513R001859820007-1" APPROVED FOR RELEASE: 09/01/2001

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On nomographic approximation of ...

$$/R_{\rm n}/<\frac{MR}{R-r}\left(\frac{r}{R}\right)^2\tag{3.6}$$

where one can take as R the distance between the point z_0 and the nearest singularity of the function f(z). Under certain conditions Eq. (3.1) (w = f(z)) can be approximated by

(5.9)
$$w \approx f(z_0) + \frac{(z - z_0)}{1!} f'(z_0) + \frac{(z - z_0)^2}{2!} f''(z_0);$$

if $\arg f''(z_0) = \pi n/2$, then Eq. (3.9) is nomographable by a nomogram of the second kind. The first, more accurate approximation, is obtained by solving a system of elliptical equations. After computations one obtains

$$\operatorname{cn}^{2}(x, \sqrt{m}) = \frac{2m - 1 + \sqrt{(2m - 1)^{2} + 4mm_{1}\cos^{2}x \operatorname{ch}^{2}x}}{2m\operatorname{ch}^{2}x}.$$
 (5.11)

and

 $\sinh^{2}(x, \sqrt{m}) = \frac{1 + 2 \sin^{2} x - \sqrt{(2m-1)^{2} + 4mm_{1} \cos^{2} x \cosh^{2} x}}{2m \cosh^{2} x}.$ (5.12),

S/558/61/000/007/001/008 D299/D302

On nomographic approximation of ...

graphic approximation of ... D299/D302
$$dn^{2}(x, \sqrt{m}) = \frac{ch \ 2x-2m \ sh^{2}x + \sqrt{(2m-1)^{2} + 4mm_{1}\cos^{2}xch^{2}x}}{2 \ ch^{2}x}$$
(5.13)

Further, an approximate elementary formula is derived for Weierstrass's function $\mathscr{C}(x, \mathcal{E}_2, \mathcal{E}_3) \equiv \mathscr{C}(x)$. One obtains

$$S^{2}(x) \approx -\frac{2m(m-\gamma) \cdot k^{2} x_{1} + 1 - 5m - (m+1) \cdot \frac{1}{2} (2m-1) + 4mm_{1} \cos^{2} x_{1} \cosh^{2} x_{1}}{1 + 4m^{2} \cdot \frac{1}{2} x_{1} - \frac{1}{2} (m+1) \cdot \frac{1}{2$$

$$\frac{3(1-m)}{(n+1)(m-2)(1-2m)\beta_2}.$$
(6.7)

$$x_1 = 3x \sqrt{\frac{(1 - m + m^2) \, 2\pi}{(m + 1) \, (1 - 2m) \, (2 - m) \, g_2}}$$
 (6.7)

By means of these formulas it is possible to find an approximate expression for any elliptic function. For the integral where

y elliptic function. For the
$$\frac{d\xi}{(6.8)}$$
, $\omega = p + qi$, $z = a + bi$

Card 4/10.

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On nomographic approximation of ...

one obtains the approximate formulas

$$\cos z \approx \sqrt{\frac{|\cos z|}{|\cosh w|}}, \quad \sin z \approx \sqrt{\frac{|\cosh w|}{|\cosh w|}}, \tag{6.9}$$

for m=0.5. The accuracy of the obtained approximations is very high. The obtained formulas can be also used for complex values of x. Weierstrass's formula can be rewritten as

$$S^{2}(r) = \varepsilon \frac{2m(m-2) \sin^{2} x_{1} + 1 - 5m - (m+1) \sqrt{(2m-1)^{2} + 4mm_{1} \cos^{2} x_{1} \cosh^{2} x_{1}}}{1 + 2m \sin^{2} x_{1} - \sqrt{(2m-1)^{2} + 4mm_{1} \cos^{2} x_{1} \cosh^{2} x_{1}}} \times$$

$$(6.24)$$

$$x_1 = x\sqrt{-\varepsilon}\sqrt{\frac{3g_2}{4(1-m+m^2)}}.$$
 (6.25)

where'
Further, rougher approximation is considered. Nomographs are given of some elementary functions, (hyperbolic trigonometric functions of a complex argument). The accuracy of the obtained formulas is compared with well-known approximations of elliptic functions, ob-

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5/558/61/000/007/001/008 D299/D302

On nomographic approximation of ...

tained by expansion in infinite series or products. The obtained formulas yielded more accurate results. The numerical examples illustrated the usefulness of nomographic approximation of higher transcendental functions by means of elementary functions, and the nontriviality of this approximation. Further, general methodological principles of nomographic approximation are set forth and some function-theoretical nomographic results (obtained recently by A.N. Kolmogorov and his school), are reviewed. The case is considered when no best approximation (in the sense of Chebyshev) exists; instead of the best approximation, one determines the allowed approximation of the function z = F(x, y), given on the set M, by the nomographic functions z = f(x, y), also given on M. Let (13.4)

 $d \equiv d(r, F; M) = \sup_{M} / F(x, y) - f(x, y) /.$

The number $d_0 = \inf_{\mathbf{f}} d$ is called the index of accuracy of the nomegraphic approximation of F on the set M, by functions which belong to a given class of functions r. Although the problem of finding nomographable approximations, is indeterminate in general and a large number of unrelated practical methods exist, the author propo-Card 6/10

CIA-RDP86-00513R001859820007-1" APPROVED FOR RELEASE: 09/01/2001

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On nomographic approximation of ...

ses to calculate the indexes of accuracy of a nomographic approximation of F, by means of continuous nomographable functions of each of the given class of functions f, and to find the simplest possible method of choice of the allowed function f on the basis of the accuracy $\varepsilon > d_0$ of the allowed nomographic approximation. The class of nomographable functions of a complex variable is expressed by

 $\overline{w} = A \int_{0}^{z=z_{0}} \frac{\partial z}{\sqrt{V(z, g_{z}, g_{z}) - B}} + w_{0} = A \int_{0}^{Q(z-z_{0})} \frac{dz}{\sqrt{(z-B)(4z^{2} - g_{z}z - g_{z})}} + w_{0}$

Further, a concrete method of nomographic approximation to analytic functions by means of analytic nomographable functions is proposed; the method is based on a theorem proved by the author. Finally, it is shown that the approximate formulas for the derivatives of elliptic functions (Jacobi's as well as Weierstrass's), can be obtained in two different ways. The degree of accuracy of the approximations in two different ways. is estimated. Chapter II: The theory is developed of nomographing of functions of a complex double or dual variable in the real projective plane. The concept is introduced of double or dual nomo-Card 7/10

s/558/61/000/007/001/008 D299/D302

On nomographic approximation of ...

grams of functions of type $f(z_1, z_2, z_3) = 0$, considered in the projective plane and defined over double (elliptic complex numbers $z = x + \varepsilon y$, $\varepsilon^2 = +1$) or dual (parabolic numbers $z = x + \omega y$, $\omega^2 = 0$) $z=x+\epsilon y$, $\epsilon^*=+i$) or qual (parabolic numbers $z=x+\omega y$, $\omega^*=0$) algebras, whose geometry is studied in reference 3 (B.A. Rozenfel'd negetial n breviated form. The basic formulas for nomographability of functions of double or dual variables, are derived. It is shown that many geometrical properties, characteristic of nomograms of ordinary functions of a complex variable, are retained. Further, a real space is constructed for the interpretation of the corresponding complex nomograms of functions of more than 2 complex variables x + Ey or x + wy. The projective plane, constructed over double and dual algebras, is denoted by P_2 and P_2 , and the corresponding linear real spaces -- by \tilde{L}_4^* and \tilde{L}_4^* . The linear interpretations of the complex nomograms have two applications: 1) The hyperbolic, parabo-Card 8/10

On nomographic approximation of ...

S/558/61/000/007/001/008 D299/D302

lic and elliptic numbers are used in the study of the linear geometries of the corresponding non-Euclidean and Euclidean spaces, and 2) In the 9 plane geometries of Klein, corresponding to the 9 possible metrics of length and angle. After the projective space P₂ has been constructed, the space L₄ is defined as the space of pairs of real straight lines of the space E₃₀₀, which are reciprocal polars with respect to the imaginary sphere K. The pairs of straight lines are called "points" of the space L₄. The configuration theorems (Desargue's, Pascal's, etc.) hold in L₄. The above theoretical considerations make it possible to design a "straight line" of space L₄ in the form of a material "ruler". This ruler is made of 2 rectangular metal strips, put together so as to form an "X-shape" (scissors); similar "rulers" are constructed in the spaces L₄ and L₄. The rulers for all 3 spaces L₄, L₄ and L₄ can be executed in the form of a simple instrument, (shown in a figure). The constructed linear space contains a linear interpretation of double and dual variables, isomorphic to real nomograms. It is noted that all 3 Card 9/10

S/558/61/000/007/001/008
On nomographic approximation of ... D299/D302

complex nomographs ($i^2 = -1$, $z^2 = +1$, $\omega^2 = 0$), are of practical interest in nomographing functions of corresponding complex variables, met in linear real geometries of hyperbolic, elliptic and parabolic space. Finally, various conformal nomographs are considered. Thereby the corresponding Euclidean and Riemannian metrics are introduced in the conformal planes z = a + Di, z = a + Di, and z = a + DW. The author notes that the construction of nomographs in projective spaces can be further developed, in particular over other algebras (quaternions, alternions, etc.). There are 21 figures and 25 references (14 belonging to the first chapter, and 11 to the second): 17 Soviet-bloc and 8 non-Soviet-bloc (including 5 translations). The reference to the English-Language publication reads as follows: A.A. Albert, Quadratic forms permitting composition. Ann. of Math., 43, 1942, 161-177.

Card 10/10

USSR/Mathematics - Nomography

1 May 53

"Algebraic Solution of the Problem of Anamorphosis of Functions in Invariant Form,"

I. A. Vil'ner

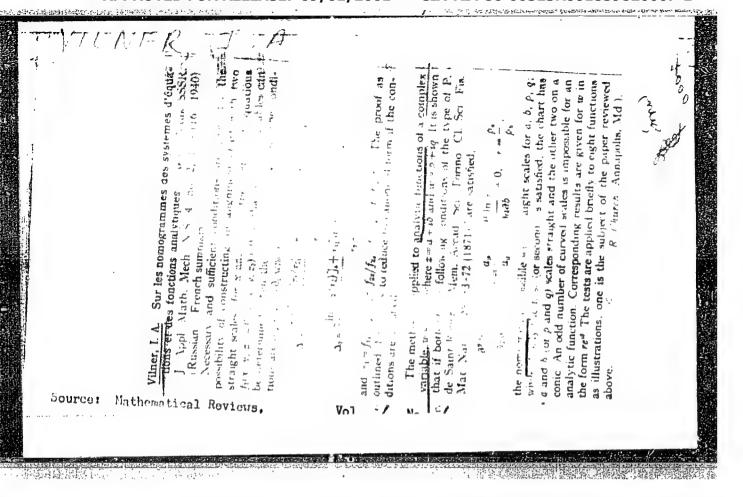
DAN SSSR, Vol 90, No 1, pp 5-8

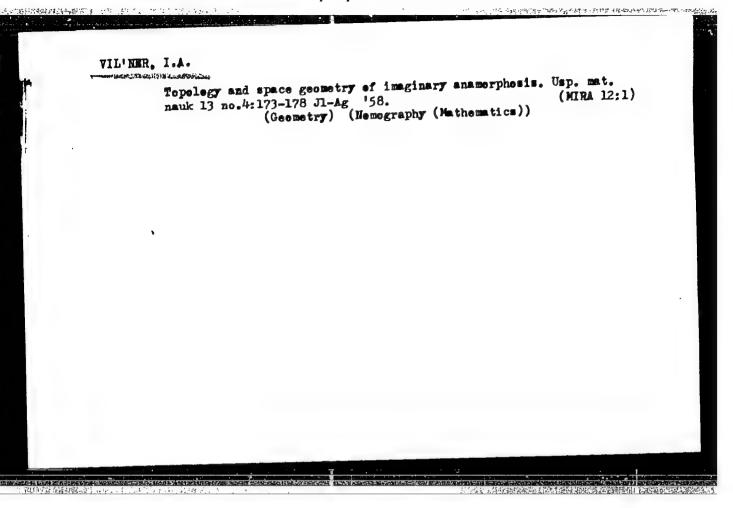
Dets the vectors $\frac{1}{3}$ (i =(1,2,3) from the eq F = ($\frac{1}{123}$). This eq is encountered in the problem of the anamorphosis of a function F that depends on three abstract variables z_1 , z_2 , z_3 and on any number of parametric abstract variables z_1 , z_5 , ...(which influence automatically the dimension and nature of the scales and fields of the nomogram). Makes the nonrestrictive assumption that vector $\frac{1}{3}$ does not depend on z_1 , z_2 . Cites the book Nomograficheskiy Sbornik (Nomographic Symposium), Moscow State Univ, 1951. Thanks Acad A. N. Kolmogorov, who presented the paper, 12 Mar 53.

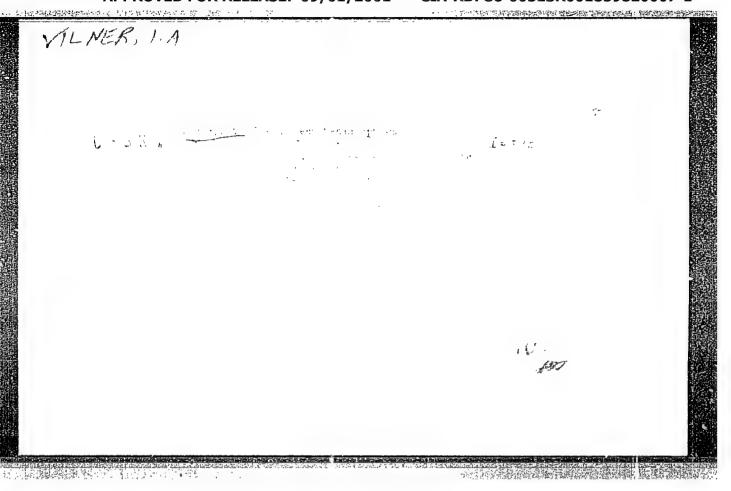
Akad Nauk SSSR Appl Math Mod. NS 4 no. 145-152 (1940). (Russian. English summary) An alignment dourant is presented which permits determination of any two of the four quantities in the relation land of the state of the other two or given by the state of the other two or given by H Schwerdt fire Arm of the long for Nanographie in det Mathematik, Springer, Berlin, 1931 figure 235.) The equations come of the variables are those of Rivinger for the grant for some of the variables are those of Rivinger for the same of the solution for any variables. The scales are also calibrated so they can be used for tan (a+i\theta) = reit. Source: Mathematical Reviews, Vol. 7 No.	-		iner, I. A. Diag	grams for calculatin	f complex serves		000
Schwerdt [Tre Arwert my fer Noncographie in der Mathe matik, Springer, Berlin, 1931 figure 235] The equations common the variables are those of a Religion (Legicera, 1931) and the variables are those of a Religion (Legicera, 1931) and the variables are those of a Religion (Legicera, 1931) and the variables are those of some single the ranges of the variables that are included permit solution for any values. The scales are also calibrated so they can be used for tan (\alpha + i\beta) = 1646. R. Church (Annapolis, Md.).		ing, Èqe	145 152 (1940) An alignment do nation of any two the parts — end	Russian. Englis Russian. Englis suram is presented to of the four quar tent the other two	Moch NS 4 is h summary) which permits di itities in the rela	eter tion	
of the variables that the included permit solution for any values. The scales are also calibrated so they can be used for $\tan (\alpha + i\beta) = re^{i\beta}$. R. Church (Annapolis, Md.).		erer File	wive essenting and the Armanian Bringer, But the war and the war are as a second secon	The with gram for the long for Nonlog erbn, 1931, figure tables are to see of the long of	tan a given by raphie in det Ma 235. The equat Richard Lie.	H the ions !	e
	Sources	60 (V4) tan	to be a real to variables the best The scales a $(\alpha+i\beta)=re^{i\beta}$.	of the Verneur over at the included per readso calibrated so R. Church	his since the rai mit solution for they can be used (Annapolis, Md.	iges anv	

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16.6500

AUTHOR: Vil'ner, I.A.

TITLE: The Problem of the General Anamorphosis in the Space and on the Plane, its Algebraization and Stereoscopic Nomography

PERIODICAL: Referativnyy zhurnal. Matematika, 1960, No.9, p.201, Abstract No.11003. Sb.statey Vses.zaochn.politekhn.in-ta, 1958, vyp.21, pp.98-118

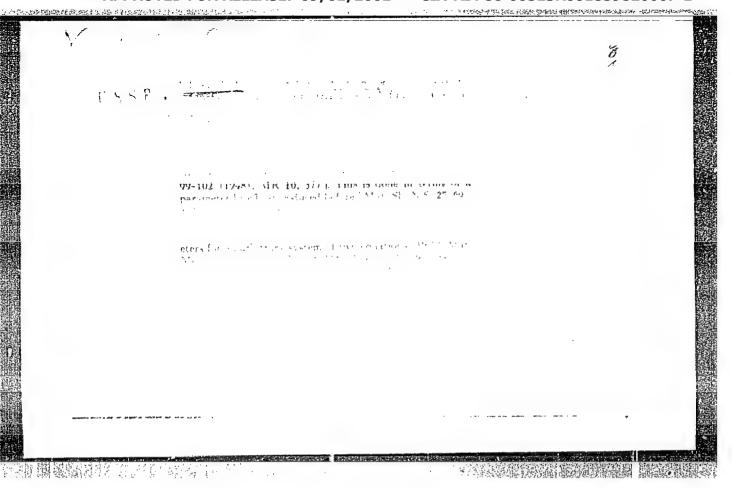
TEXT: The paper contains the consideration of numerous questions of the theoretical nomography, especially of those mentioned in the title. The problem of the anamorphosis in the N+1-dimensional space is reduced to the N-dimensional case by a repetition of the variables and by an empirical selection of the solutions of certain functional equations.

[Abstracter's note: The above text is a full translation of the original Soviet abstract.]

Card 1/1

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CIA-RDP86-00513R001859820007-1



VIL'NER, I.A.

SUBJECT

PG - 699 USSR/MATHEMATICS/Applied mathematics CARD 1/2

AUTHOR

VIL'NER I.A.

TITLE

Stereoscopic nomography and the solution of the problem of

general anamorphosis in the N-dimensional space.

PERIODICAL

Uspechi mat. Nauk 11, 4, 123-130 (1956)

reviewed 4/1957

The author proposes the application of spatial nomograms with the aid of the stereoscopic projection. Let the problem of the general spatial anamorphosis of the equation be solved, the point M(x,y,z) of the spatial nomogram be given by the author's formulas (compare: Vil'ner, Doklady Akad. Nauk 58, 5, (1947); Doklady Akad. Nauk 90, 1, (1953); Uspechi mat. Nauk 8, (1953); Mat. Sbornik, n. Ser. 27, 1, (1950)). Let (a, b, c) be the centers of projection which e.g. agree with the pupil of the left hand eye (i=1) or the right hand eye (i=2). The projections of M onto the image plane of the nomogram (X,Y) for the left hand eye and the right hand eye are given by

$$X = a_{\underline{i}} - c_{\underline{i}} \frac{x - a_{\underline{i}}}{z - c_{\underline{i}}}$$
, $Y = b_{\underline{i}} - c_{\underline{i}} \frac{y - b_{\underline{i}}}{z - c_{\underline{i}}}$.

Taking $c_1 = c_2 = c$, $b_2 = b_1 = 0$ and $a_2 = -a_1 = -a$, then one obtains simpler relations. The obtained equations represent two simple simultaneously

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Uspechi mat. Nauk 11, 4, 123-130 (1956)

CARD 2/2

PG - 699

nomogrammable systems the nomograms of which can be established in advance without difficulties so that such a spatial nomography becomes not more difficult than the ordinary one.
Under neglection of details some generalizations are given.

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859820007-1

VIL'NER, I, A.

Analiticheskiye funktsii komrleksnogo peremennogo pervogo nomograficheskogo klassa i ikh nomogramny. DAN, 53 '1946), 191-194.

Nomogrammy analiticheskikh funktsiy kompleksnogo peremennogo M., Dissertatsiya (1947).

SO: Mathematics in the USTR, 1917-1947 edited by Kurosh, A.G., Markushevich, A.I., Rashevskiy, P.K. Moscow-Leningrad, 1948

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859820007-1

VIL'NER, I.A.

Algebraic Solution of the Problem of the Anamorphose of Functions in an Invariant Form. DAN SSSR, n. Ser. 90, 5-8- (1953).

VIL'NER, I. A.

"Homograms of Analytical Functions of a Complex Variable (First Class)."
Sub 5 Mar 47, Moscow Order of Lenin State U imeni M. V. Lomonosov

Dissertations presented for degrees in science and engineering in Moscow in 1947

SO: Sum No. 457, 18 Apr 55

VILNER, I. A. Cand. Physicomath. Sci.

Dissertation: "Nomogranes of Analytical Functions of a Complex Variable (First Class)." Moscow Order of Lenin State U. imeni M. V. Lomonosov. 5 Mar. 1947.

SO: Vechernyaya Moskva, Mar. 1947 (Project #17836)

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859820007-1

VILTER, I. A.

USSR/Mathematics - Nomograms

Card 1/1

Author : Vil'ner, I. A.

Nomograms for the computation of elliptic functions and integrals Title

Periodical: Usp. mat. nauk, 9, No 2(60), 113-124, 1954

Seven nomograms that permit one to find the value of x = sn(t,k) for Abstract

complex values of the modulus k and the variables x and t.

Acknowledges the assistance of L. A. Lyusternik, Corresponding Member of the Academy of Sciences USSR. Methods are shown for finding the values of the other elliptic functions (cn(t,k), dn(t,k) and the integrals $t = 6^2(1 - K^2 \sin^2 z) - 1/2 dz$.

: May 8, 1952 Submitted

VIL'NEF, I. A.

Mathematical Reviews Vol. 14 No. 10 Nov. 1953 Numerical and Graphical Mathods.

7-13-54

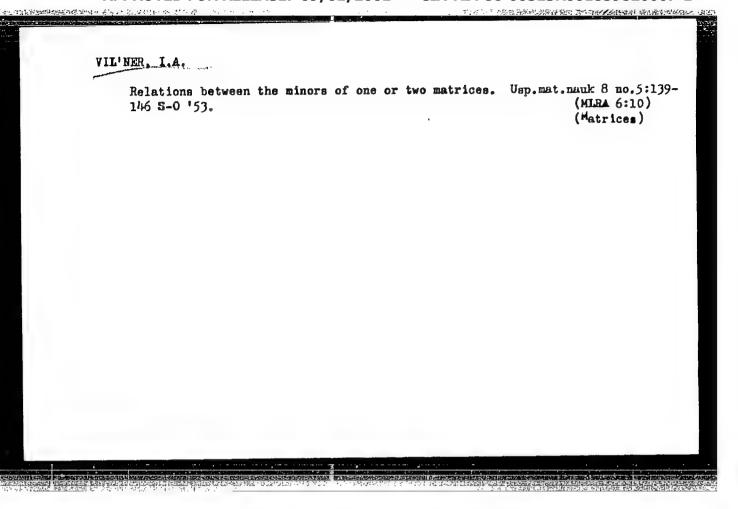
Vil'ner, I. A. The analytic theory of nomographing a function of a complex variable of the first class. Mat. Shornik N.S. 27(69), 3-46 (1950). (Russian)

In various earlier papers [see especially Doklady Akad. Nauk SSSR (N.S.) 58, 729-732 (1947); these Rev. 9, 534] the author has given summaries and certain practical applications of his work on representing an analytic function p+iq=f(a+ib) as an alignment chart. The present paper gives a more detailed account of this work, stressing its mathematical aspects. The paper is, however, far from selfcontained; essential steps in arguments and even statements of results are abbreviated by detailed references to the author's dissertation (1946) which is unfortunately not available to the reviewer. As not explicitly mentioned in previously reviewed papers the following may be mentioned: (1) several further sets of necessary and sufficient conditions for w = f(z) to be of first class (i.e., no more than two of the four scales curved), (2) the theorem and some consequences that if $z = \int_{-\infty}^{\infty} f(t)dt$ is of first class with a scales straight, the same is true of $s = \ln f(w)$, and (3) the derivation of relations among nomograms for branches of a multiple-valued function if they are of the first class. R. Church (Monterey, Calif.).

1 math

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VIL, NER, I. A.

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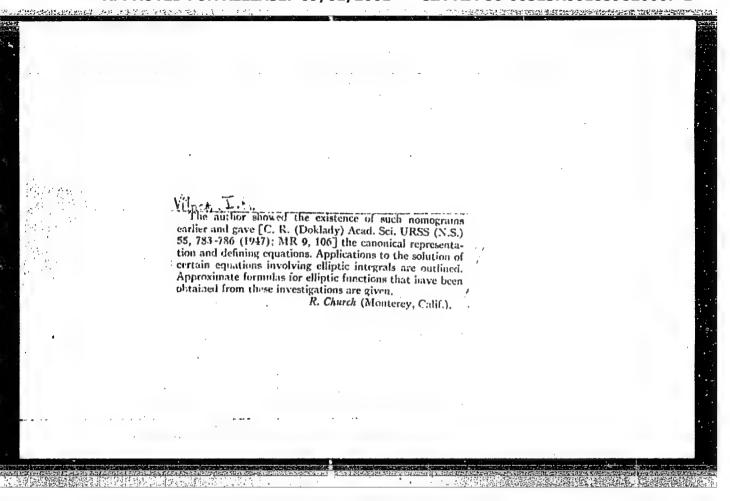
Privedenie Momografiruemoy analiticheskoy zavisimosti K normal, noy forme. Doklady Akad. Nauk essr, Movaya seriy, t. lxix, No 1, 1949, c. 3-6 Bibliogr: 7 Mazv.

SO:Letopis' Zhurnal'nykh Statey, Vol. 45, Moskva, 1949

USSR . Wil'ner, I. A. Algebraic solution of the problem of anamorphosis of functions in invariant form. Doki. Akad. Nauk SSSR (N.S.) 90, 5-8 (1953). (Russian)

Vil'ner, I. A. Solution of the problem of anamorphosis of functions in (N-1)-dimensional space by vectoralgebraic methods. Uspehi Mat. Nauk (N.S.) 8, no. 3(55), 153-156 (1953). (Russian)

In the first of those two papers it is stated that the vanishing of the fourth order determinant $|a_{ij}|$, $a_{ij} = F_i^{ij}a_{ij}^{i}a_{ij}^{i}$, is necessary and sufficient for the representation as a scalar product: $F(z_1, z_1, z_2) = \sum_{i=1}^{n} a_i(z_1)b_i(z_1, z_2).$ Further necessary and sufficient conditions for the representation of F as a scalar triple product (Massau determinant) a_i - a_i - x_i



"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859820007-1

30500 5/051/62/012/003/013/016 E032/E314

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AUTHORS:

Vil'ner, L.D. (Deceased), Rautian, S.G. and

Khaykin, A.S.

On some possible applications of the Fabry-Perot TITLE:

interferometer with internal illumination

Optika i spektroskopiya, v. 12, no. 3, 1962, PERIODICAL: .437 - 439

The authors are concerned with the properties of a Fabry-Perot interferometer containing an emitting medium between the plates. This type of modification of the Fabry-Perot interferometer is of interest in view of the suggestion made by A.M. Prokhorov (Ref. 1 - ZhETF, 34, 1658, 1958) that it may be suitable for use as a resonator for a quantum oscillator (Ref. 2 - N.G. Basov, O.N. Krokhin, Yu.M. Popov - Usp. fiz. nauk, 72, 161, 1960). Other applications are discussed in the present paper. It is assumed that the medium between the plates has a finite absorption coefficient and emits uniformly throughout its volume. A formula is derived for the intensity

Card 1/2

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On some possible applications

distribution and it is shown that the resulting interference pattern takes the form of concentric interference rings. Analysis shows that this arrangement improves the line-to-background ratio and may therefore be suitable for the spectral analysis of very small quantities of impurities and similar applications. There is 1 figure.

SUBMITTED: June 12, 1961

V

Card 2/2

MIRONOVA, L.L.; COL'ERIN, N.Ye.; EL'BERT, L.B.; LASHKEVICH, V.A.;

VIL'NER, L.M.

Study of some conditions for trypsination of monkey kidneys
capable of increasing cell harvests. Vop.virus 7 no.4:119-121
(MIRA 15:8)
J1-Ag '62.

1. Institut poliomiyelita i virusnykh entsefalitov AMN SSSR,
Moskva.

(TISSUE CULTURE) (KIDNEYS) (TRYPSIN)

CHUMAKOV, M.P.; L.VOV, D.K.; SARMANOVA, Ye.S.; GOL'DFARB, L.G.; NAYDICH, G.N.; CHUMAK, N.F.; VIL'NER, L.M.; ZASUKHINA, G.D.; IZOTOV, V.K.; ZAKLINSKAYA, V.A.; UMAKSKIY, K.G.

Comparative study of the epidemiological effectiveness of vaccinations with tissue culture and brain vaccines against tick-borne encephalitis. Vop. virus. 8 no.3:307-315 My-Je'63.

(MIRA 16:10)

1. Institut poliomyelita i virusnykh entsegalitov AMN SSSR, Moskva i Kemerovskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya... (ENCEPHALITIS—PREVENTIVE INOCULATION)

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859820007-1

VIL'NER, L. M.: Master Med Sci (diss) -- "The chick embryo as an experimental model in the study of the virulence and immunogenicity of strains of S. typhi".

Moscow, 1959. 15 pp (Min Health USSR, Central Inst for the Advanced Training of Physicians), 200 copies (KL, No 8, 1959, 138)

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859820007-1

VIL'NER, L.M.

Cultivation of typhoid microbes in developing chick embryos. Zhur.
mikrobiol. epid i irmun. 31 no.6:17-19 Je '60. (MIRA 13:8)

1. Iz Gosudarstvennogo kontrol'nogo instituta meditsinskikh biologicheskikh preparatov imeni Tarasevicha.
(SAIMONELLA TYPHOSA)

ETINGOF, R.N.; DZAGUROV, S.G.; VIL'NER, L.M.

Possibility of culturing the poliomyelitis virus on simple media.

Vop. virus. 7 no. 1:115-118 Ja-F '61.

(MIRA 14:4)

1. Institut po izucheniyu policmiyelita AMN SSSR, Moskva.

(POLIOMYELITIS)

(BACTERIOLOGY—CULTURES AND CULTURE: MEDIA)

DZAGUROV, S.G.; SHMELEVA, G.A.; VIL'NER, L.M.

Comparative study of the dynamics of the inactivation of a virus comparative study of the dynamics of the inactivation of a virus in dialyzed and nondialyzed specimens of vaccine against poliomyelitis detoxified with formaldehyde. Vop. virus. 6 no.5:616-617 S-0 161.

(MITA 15:1)

1. Institut poliomiyelita i virusnykh entsefalitov AMN SSSR, Moskva.

(POLIOMYELITIS)

CHUMAKOV, M.P.; L'VOV, D.K.; GAGARINA, A.V.; VIL'HEE, L.M.; KODIN, I.M.; ZAKLINSKAYA, V.A.; GOL'DFARB, L.G.; KEAHERA, M.K.

Study of conditions influencing the effectiveness of immunization against tick-borne encephalitis. Report No.1: Influence of the against tick-borne encephalitis. Report No.1: Influence of the immunogenic properties of the vaccine on the effectiveness of immunogenic properties of the vaccine on the effectiveness of immunogenic properties of the vaccine on the effectiveness of immunization (MIRA 18:10) against tick-borne encephalitis. Report No.1: Influence of the against tick-borne encephalitis. Influence encephalitis. Influence of the against tick-borne encephalitis. Influence encephalitis. Influence encephalitis. Influence encephalitis. Influence encephalitis. Influence encephalitis. Influence encephalitis. Influence

1. Institut poliomiyelita i virusmykh entrefalitov AMN SSSR, Moskva.

GAGARINA, A.V.; VIIINER, L.M.; VASENOVICH, M.I.; SVET-MOLDAYSKAYA, I.A.; KHANINA, M.K.; SVET-MOLDAVSKIY, G.Ya.

Nonencephalitogenic formolized vaccine against tick-borne encephalitis. Vcp. virus. 9 no.2:167-169 Mr-Ap 164. (MIRA 17:12)

1. Institut policmiyelita i virusnykh entsefalitov AMN SSSR, Moskva.

CHUMAKOV, M.P.; L'VOV, D.K.; GOL'DFARB, L.G.; ZAKLINSKAYA, V.A.;
GAGARINA, A.V.; MASHKOV, V.T.; YASIN, A.Ye.; RODIN, V.I.;
VIL'NER, L.M.

Effect of the length of intervals between inoculations on the efficacy of vaccination and revaccination against tick-borne encephalitis. Vop. virus. 10 no.3:266-270 My-Je '65.

1. Institut poliomiyelita i virusnykh entsefalitov AMN SSSR, Moskva, i Kemerovskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya.

VII THER, 1.S.

Some data on the results of treatment of cancer patients with cadmium indide and reminarizable hydrochloric and at the Second United Hospital of the Moscow district of Leningrad. (MIR) 17:2) Vop. onk. 9 no.6:125-125 103.

1. Iz 2-oy ob*yed:nennoy bol*nitey Moskovskogo rayona (glavnyy vranh - P.G. Kachelova).

VIL'MER, P.D. (Kuybyshev); OSIPOV, N.Ya. (Kuybyshev)

Determining dynamic rigidities of reters by the method of expansion of dynamic flexures in series according to natural forms. Izv. vys. ucheb. zav.; av.tekh. 2 no.1: (MIRA 12:3) 111-124 '59. (Reters)

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859820007-1

VARENITSA, Ye.T., diktor biolog. nauk; Katkoya, M.M., kend. sel'skokhoz.

nauk; VIL'NER, R.A., starshiy zcotekhrik

Increasing the butterfat percentage of black and sender cattle

using hybrid bulls from the 'Gork' Jeninskiye' Yarm.

Agrobiologila nc.31400-410 My.Je '65.

(MCRA 18211)

1. Nauchno-insledovatel'sky institut ael'skogo khozyayatva

tsentral'nykh rayonov nechernozemnoy zony.

GAPEYEV, Boris Mikhaylovich; VIL'NER, S.L., retsenzent; SMIRNOVA,
G.V., tekhn. red.

[Taking apart, cleaning and reassembling wrist watches]Razborka, chistka i sborka naruchnykh chasov. Moskva, Mashgiz,
1961. 20 p.

(Glocks and watches—Repairing and adjusting)

VILIMER, V.A., ingh. (Kiyev) SOKOLOV, V.G., ingh. (Kiyev)

Fine grained improved asphalt concrete. Gor. khoz. Mosk. 32

(MIRA 11:7)

no.6:31 Je '58.

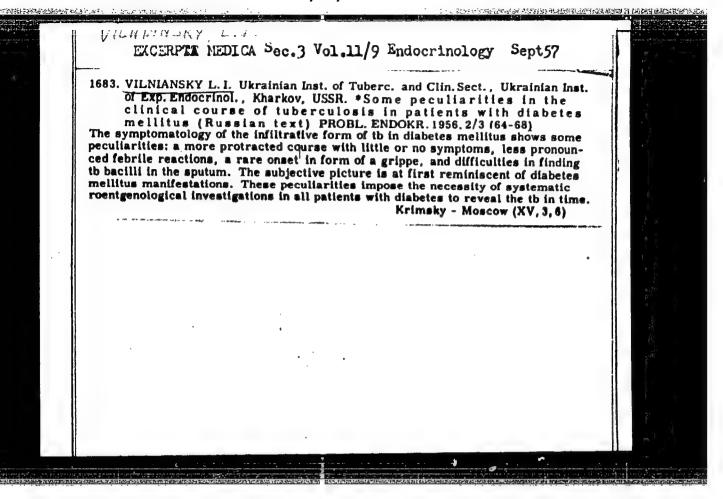
(Asphalt concrete)

VIL'NER, Yakov Moiseyevich, dots.; VORTYARSKIY, Iosif Pinkhusovich, dots.; KUZMENKOV, dots.; KUZMENKOV, Vasiliy Ivanovich, dots.; LAZAREVICH, Ivan Grigor'yevich, dots.; SHUL'PIN, Igor' Aleksandrovich, dots.; AKALOVICH, N.M., red.

[Laboratory practice in hydraulics: Manual and methodological instructions on laboratory procedures in hydraulics; for correspondence and part-time students] Laboratornyi praktikum po gidravlike: Rukovodstvo i metodicheskie "kazaniin po provedeniiu laboratornykh rabot po gidravlike dlia studentov zaochnogo i vechernego obucheniia. [By] IA.M.Vil'ner i dr. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1961. 131 p. (MIRA 18:4)

1. Kafedra gidravliki Belorusskogo politekhnicheskogo instituta (for all except Akalovich).

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859820007-1



"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859820007-1

WIL'NINA, M.A.

More about the quality and classification of fine wool. Tekst.proz.

(MIRA 1619)

1. Glavnyy inzh. Nevinnomysskoy fabriki pervichnoy obrabotki shersti.

(Wool-Standards)

ORLOV, I.M., dotsent; VIL'NINA, M.A.; METEL'KOVA, T.V.

Quality of the wool from fine-wooled sheep bred in the Northern Caucasus and Kalmyk A.S.S.R. Tekst. prom. 24 no.2:18-19 F '64.

(MIRA 17:3)

l. Kafedra tovarovedeniya i tekhnologii zhivotnogo syr'ya
Moskovskoy veterinarnoy akademii (for Orlov). 2. Glavnyy inzh.
Nevinnomysskoy fabriki pervichnoy obrabotki shersti (for Vil'nina).
3. Nachal'nik nauchno-issledovatel'skoy laboratorii Nevinnomysskoy fabriki pervichnoy obrabotki shersti (for Metel'kova).

VILNIS, R., CAND TECH SCI, "THERMAL DECOMPOSITION OF DAMP PEAT IN DRYING WITH RECIRCULATING SUPERHEATED STEAM UNDER PRESSURE." RIGA, 1961. (STATE COM FOR HIGHER AND SEC SPEC ED OF THE COUNCIL OF MINISTERS LASSR, LATVIAN AGR ACAD). (KL. 3-61, 213).

182

AUTHORS:

Gul', V. Ye., Vil'nits, S. A.

307/156-58-2-41/48

TITLE:

Temperature Influence on the Kinetics of Growth of the Cutting of Vulcanizate (Vliyaniye temperatury na kinetiku

razrastaniya nadreza v vulkanizate)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya

tekhnologiya, 1958, Nr 2, pp. 365-368 (USSR)

ABSTRACT:

Several new papers (Refs 1-4) give evidence of the fact that the rupture of the vulcanizate represents a process which continues to develop in the course of time. A slow and a rapid stage of rupture is distinguished. (Ref 1). It was shown by slow-motion pictures that the velocity of tearing is first very small but later it increases jump-like. This can be observed with as well as without a cutting. The influence of cutting was investigated in detail (Ref 5). The tearing of a vulcanizate has much in common with the tearing of brittle materials (L.N. Tsarskiy and G.Z. Krasikova

participated in the experiment). Nevertheless the difference

between the mechanism of a highly elastic and a brittle

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tearing is so considerable that important changes of the time course of its growth within the range of the passing from the highly elastic to the vitrified state could be expected. This was the purpose of the present investigation. Filled vulcanizates served for the experiment: mixture Nr 1: rubber SKB and Nr 2: SKB with natural rubber at a ratio of 4: 6, mixture Nr 1 contained 45%, Nr 2 - 10% of soot. The vulcanizates could be tested at temperatures of up to - 57°. The projection of the slow-motion pictures made possible a retardation by 10 to 500 times. It can be seen from the elaboration of the motion pictures on the analyzer that at all temperatures the shape of the curves described already earlier could be observed (Ref 5). The initial velocity of tearing is so small that it cannot be investigated by means of the slow-motion picture method. Immediately before the end of tearing its velocity increases jump-like. In the case of the same conditions the maximum velocity is determined by the temperature of examination. At a lowering of temperature

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from 22 to 0° the velocity decreases from 2500 to 1000 mm/sec. The latter continues to decrease and then increases again at -50° and lower: it then reaches values of approximately 3000 mm/sec. Figure 1 shows the dependence concerned. Velocity does not change regularly. Apparently this change of the time course is in connection with the passing from a highly elastic tearing to a brittle one. The passing from a highly elastic state into a vitrified one is accompanied by a decrease of velocity of the formation of cracks and other phenomena. Their consideration is of great importance for the solution of practical problems which are connected with the mechanical destruction of vulcanizates. There are 2 figures and 9 references, 8 of which are Soviet.

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Temperature Influence on the Kinetics of Growth

807/156-58-2-41/48

of the Cutting of Vulcanizate

ASSOCIATION: Kafedra fiziki Moskovskogo instituta tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Chair of Physics of the Moscow Institute for Fine Chemical Technology imeni M.V.

Lomonosov Moscow)

SUBMITTED:

October 29, 1957

Card 4/4

CIA-RDP86-00513R001859820007-1" APPROVED FOR RELEASE: 09/01/2001

ZINOV'YEV, Vladimir Andreyevich, prof.[deceased]; PRISHED'KO,
Nikolay Avtonomovich; VIL'NITS, Samuil Avsayavich;
FADEYEV, I.I., red.; BOCHAROVA, Yu.F., red.

[Machine parts] Detali mashin. Izd.2. Moskva, Vysshaia
shkola, 1964. 347 p.

(MIRA 17:12)

SOV/138-58-10-6/10

AUTHORS:

Gul', V.Ye; Willmits, S. A. Gel'perin, N. I; Il'in, N.S; Kaplunov, Ya. N; Tsarskiy, L. N. and Krasikova, G. Z.

TITLE:

Investigation of the Possibility of Pulverizing Chilled Rubber (Razrabotka sposoba izmel cheniya okhlazhdennykh

rezin)

PERIODICAL:

Kauchuk i Rezina, 1958, Nr 10, pp 22 - 28 (USSR)

ABSTRACT:

Much rubber scrap is not re-used because of the difficulty of pulverizing the material. This difficulty can be overcome by chilling the rubber. The authors first review the changes in physical and mechanical properties of rubber at low temperature. Fig.1 shows maximum speed of rupture (mm/sec) against temperature for a vulcanized mixture of SKB and natural rubber: Fig.2 shows the same for SKB (Butyl) rubber. Each figure shows curves for three different rates of deformation. The maximum speed of rupture is that which occurs immediately before the specimen parts. The re-orientation of material at the point where rupture commences was studied by scribing a line across the specimens, and comparing the thickness of the line where rupture commences with the thickness of the line in the unruptured part of the stretched specimen. In Fig.4 these relative thicknesses are plot-

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ted against time for specimens of SKB and natural rubber at four different temperatures. The specimens were deformed at a rate of 500 mm/min. At -53°C no re-orientation at the rupture point occurs. Fig. 5 shows stress versus relative elongation for the same rubber mix at different temperatures. Fig.6a shows the relative elongation versus temperature, and Fig.6b the stress versus temperature at the moment of rupture, in each case for three different rates of deformation. In Fig. 7 the work of deformation (kg/cm3) is plotted against temperature for SKB-50 and the same in Fig. 8 for SKB-50 plus natural rubber. By comparing Figs. 2, 6 and 7 one sees that the temperature for maximum work of deformation to rupture corresponds to that for minimum speed of rupture and for maximum relative elongation at rupture. At low temperatures the low mobility of the molecular structure prevents reorientation at the point of rupture as is seen in Fig. 4; the resistance to rupture and relative elongation decrease and the speed of rupture increases. Fig.9 shows stress versus relative elongation for samples of rubber and fabric, cut from a tyre casing, at three different rates of deformation for four temperatures. These follow

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the same form as the plain rubber specimens in Fig. 5. In order to obtain a brittle state when pulverizing rubber and fabric materials the temperature must be lowered and the speed of pulverization or rupture must be increased. The apparatus shown in Fig. 10 was constructed to determine optimum speed of deformation for pulverization. Specimens 10 - 20 mm wide and 1 - 6 mm thick are clamped to the periphery of a 200 mm disc which can be rotated at various speeds. The disc runs in an insulated tank. The specimens strike against a pin mounted on a spring, so that the force acting on the pin can be measured dynamometrically, and the energy of deformation in fracturing the specimens can be calculated. Optimum speed was found to be in the region of 3000 r.p.m. From the parameters established, the hammer-mill type of pulverizer, shown in Fig.11, was constructed. The gap between the hammers and the saw-toothed periphery of the mill casing is 1.5 - 2 mm. The mill runs at 3000 r.p.m. The mill is fed with pieces of rubber about 40 x 20 x 8 mm previously cooled in a dry ice and alcohol mixture. Pulverized material discharged through the grating at the

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base of the mill was subjected to sieve analysis. Energy input was measured by a recording wattmeter. Table 1 shows results with this pulverizer for various rubber and rubber fabric materials. The size of the openings in the discharge grating was either 5 mm or 2 mm. Material was cooled to temperatures of -66°, -60° and -50°C. Time and k.w.h. to pulverize 400 gramme quantities of material are given, and the specific energy requirement in k.w.h. per metric ton of material is given in the last column. Table 2 gives the sieve analysis for the various samples for 5 mm and for 2 mm openings in the discharge grating. To complete the calculation for energy requirements, the power in k.w.h. required to cool one ton of material to temperatures between 5°C and -55°C are given. These calculations are based on an initial temperature of 20°C., specific heat of material 0.5 c.cal/kg°C, and 59.5% cooling efficiency from a Freon 12-refrigeration circuit as

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SCV/138-59-10-6/10

Investigation of the Possibility of Pulverizing Chilled Rubber in Fig.12 with a further 20% loss to air allowed for. There are 12 Figures, 2 Tables and 7 Soviet References

ASSOCIATION: Woskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institue of Precision Chemical Technology imeni M.V. Lomonosov)

Card 5/5

THE PROPERTY OF THE PROPERTY O

POZIN, M.Ye.; KOPYLEV, B.A.; SEYTMAGZIMOV, A.; VIL'NITS, Ye.L.

Rate of decomposition of Kara-Tau phosphorites treated by the chamberless process (in nonthickening pulps). Zhur. prikl. khim. 34 no.2:259-265 F '61. (MIRA 14:2)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta. (Phosphorites)

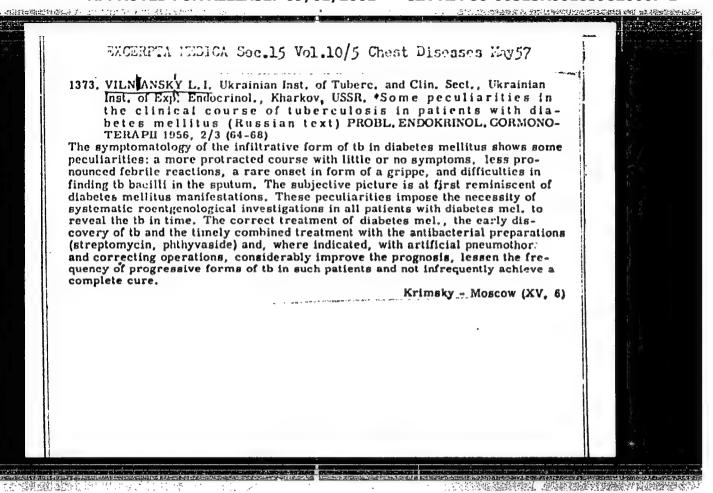
AL', G.E., doktor med.nauk; AMOSOV, N.M., prof.; ANTELAVA, N.V., prof.;
BOGUSH, L.K., prof.; VOZHESENSKIY, A.N., prof.; VIL'NYANSKIY,
L.I., kand.med.nauk; LAPINA, A.A., prof.; MASSINO, S.V., doktor
med.nauk; MIKHAYLOV, F.A., prof.; RABUKHIN, A.Ye., prof.;
KHRUSHCHOVA, T.N., prof.; SHAKLEIN, I.A., prof.; YABLOKOV, D.D.,
prof.; EYNIS, V.L., prof., zesluzhennyy deyatel' nauki, otv.red.;
KORNEV, P.G., prof., red.; KULRYAVTSEVA, A.I., prof., red.
[deceased]; LAPINA, A.I., red.; LEBEREVA, Z.A., kand.med.nauk,
red.; STRUKOV, A.I., prof.; red.; SHEBANOV, F.V., prof., zesluzhennyy deyatel' nauki, red.toma; GRINSHPUNT, Ye.M., red.; LYUDKOVSKAYA, N.I., tekhu.red.

[Multivolume menual on tuberculosis] Mnogotomnoe rukovodstvo po tuberkulezu. Moskva, Gos.izd-vo med.lit-ry. Vol.2. [Tuber-culosis of the respiratory organs] Tuberkulez organov dykhaniia. Red.toma A.B.Rabukhin i F.V.Shebanov. Book 2. 1959. 408 p. (MIRA 13:5)

1. Chleny-korrespondenty ANN SSSR (for Antelava, Bogush, Yablokov, Strukov). 2. Deystvitel'nyy chlen ANN SSSR (for Kornev).

(TUBERCULOSIS)

VIL'NYANSKIY, L.I.(Khar'kov) Some clinical aspects of tuberculosis in disbetes mellitus, Probl. endok. i gorm. 2 no.3:64-68 My-Je '56. (MLRA 9:10) 1. Is Ukrsinskogo instituta tuberkulesa (dir. - dotsent N.M.Yanov) i klinicheskogo otdela (rukovoditel' - prof. M.A.Kipelovich) Ukrsinskogo instituta eksperimental'noy endokrinologii (dir. - kandidat meditsinskikh nauk S.V.Maksimov) (DIABETES MELLITUS, compl. tuberc., pulm., role of low resist. i diabetes, diag. d ther.) (TUBERGULOSIS, FULMOMARY, etiol. and compl. diabetes mellitus, role of low resist. in diabetes, diag. d ther.)



VIL'NITSKIY, Moisey Borisovich [Vil'nyts'kyi, M.B.], kand. filos. nauk; VASILETS', I.P. [Vasylets', I.P.], red.; MATVIICHUK, O.A., tekhn. red.

> [Lenin on space and time and the theory of relativity] Lenin proprostir i chas ta teoriia vidnosnosti. Kyiv, 1961. 48 p. (To-varystvo dlia poshyrennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.1, no.23)
> (Lenin, Vladimir Il'ich, 1870-1924)
> (Relativity (Physics)) (MIRA 15:1)

S/080/61/034/001/007/020 A057/A129

5 2200 1087, 1043, 1155

AUTHORS: Bezukladnikov, A.B., Vil'nyanskiy, Ya.Ye.

TITLE: Effect of the Chlorides of Iron and Aluminum on the Chlorination Rate of Titanium Dioxide

PERIODICAL: Zhurnal Prikladnoy Khimii, 1961, Vol. 34, No. 1, pp. 49-53

TEXT: Chlorination of titanium-bearing slags in molten chlorides (carnallite) is currently being introduced into industry. Amongst other questions the effect of iron and aluminum chlorides on the chlorination kinetics of titanium oxides is important. This question was investigated in the present tanium oxides is important. This question was investigated in the present was carried out with 100% chlorine gas at 500 -900°C. 150 g carnallite was carried out with 100% chlorine gas at 500 -900°C. 150 g carnallite (0.20% Mg, 0.0005% Fe and 0.001% TiO₂) was mixed in a quartz tube with 1.6 g (0.20% Mg, 0.0005% Fe and 0.001% TiO₂) was mixed in a quartz tube with 1.6 g as at a rate of 4.5 1/hr. Then a dried mixture containing 1.6 g TiO₂ and gas at a rate of 4.5 1/hr. Then a dried mixture containing 1.6 g TiO₂ and gas at a rate of 4.5 1/hr. Then a dried mixture to the temperature of the 0.4 g coke were added after adjusting the heating to the temperature of the experiment. TiCl₄ evolved was absorbed in diluted H₂SO₄. The chlorination card 1/10

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Effect of the Chlorides of Iron and Aluminum on the Chlorination Rate of Titanium Dioxide

kinetics was investigated without additions of FeCl₃ or Λ ICl₃. Reaction between the latter and suspended TiO₂ particles was studied by chlorination of molten carnallite (containing 2 g coke) during 1.5 hr at 750°C. After this period carnallite melt containing FeCl₃ (10 g) or Λ ICl₃ (24.6 g) was added, and after 10-15 min the first sample was taken. Then 3 g TiO₂ and 1 g coke was added and 3 g samples of the melt were periodically analyzed. The obtained results demonstrate (Fig.2) that in the first 15 min at low temperatures (500° and 600°C) the chlorination rate is high. This stage of chlorination was not taken into account in calculations of the medium chlorination rate (Fig.3). The results indicate that chlorination rate in the molten carnallite depends on the temperature of the bath. According to the slope of the curve 1 in Fig.3 the authors assume that chlorination at the investigated temperatures occurs in the kinetic range. Dependence of the chlorination rate constant on temperature is given by: $\log K = 4.114 - 11,200/4.574T(11,200 = apparent activation energy)$. The results obtained for the chlorination of TiO₂ with FeCl₃ and AlCl₃ admixtures (Fig.4 and 5) demonstrate Card 2/10

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Effect of the Chlorides of Iron and Aluminum on the Chlorination flate of Titanium Dioxide

that the chlorination rate increases with the concentration of these admixtures. A considerable increase in the FeCl₃ and AlCl₃ content at the end of reaction indicates that exchange reaction according to E.I. Krech [Ref.1: ZhOKh,VII,8,1249 (1937)] may occur. Experiments on the chemism of the reaction show (Fig.6) that at a concentration of 0.4% TiO₂ practically all ferrom chloride changes into ferri chloride. With decreasing TiO₂ the FeCl₃ content increases. Apparently the following reaction takes place:

4 FeCl₃ + TiO₂ + C → TiCl₄ + 4 FeCl₂ + CO₂, 2 FeCl₂ + Cl₂ → 2 FeCl₃. Exchange reaction with AlCl₃ (Fig.7) occurs until Al₂O₃ is formed. With decreasing TiO₂ concentration the content of AlCl₃ increases due to the chlorination of Al₂O₃. Thus AlCl₃ and FeCl₃ are catalysts for the TiO₂ chlorination. Catalysis of iron compounds in chlorination of oxides was observed already by Ashkroft [Ref.2: V.M. Gus'kov, Sistematicheskoye sobraniye patentov (Systematic Collection of Patents) GONTI (1938)]. Chlorinations of TiO₂ in carnallite melt at 500°-900°C with 2% FeCl₃ demonstrated (Fig.3, curve 2) that at 680°C chlorination changes from the kinetic to the diffusion range Card 3/10

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Effect of the Chlorides of Iron and Aluminum on the Chlorination Rate of

and the apparent activation energy decreases from 7,340 cal to 770 cal. The obtained results indicate that above 680°C intensification of mixing of the melt is advantageous since a better mass exchange takes place. The chlorination rate can be increased not as much by raising the temperature, but by increasing the content of FeCl₃ or AlCl₃ in the melt. There are 7 figures and 2 references: 2 Soviet-bloc.

ASSOCIATIONS Bereznikovskiy filial VAMI (Berezniki branch of the All-Union Aluminum and Magnesium Institute) and Ural'skiy politekhnicheskiy institut (Ural Polytechnical Institute)

SUBMITTED: February 24, 1960

Card 4/10

Titanium Dioxide

VILTHER, L.M.

Use of chick embryos as experimental models studying the immunogenic and virulent properties of Salmonella typhi. Zhar. mikrobiol. epid. i immun. 29 no.10:133-137 0 58. (MIRA 11:12)

l. Iz Gosudarstvennogo kontrol'nogo instituta syvorotok i vaktsin imeni Tarasevicha.

(SAIMONHLIA TYPHOSA, immunogenic & virulent properties, determ. on chick embryo (Rus))

The control of the co

VIL'FINA, M.A.; ORLOV, I.M., mladshiy nauchnyy sotrudnik.

Improve the quality of wool sorting. Taket. prom. 18 no.8:32-34 Ag '58. (MIRA 11:10)

1.Nachal'nik tsekha sortirovki Nevinnomysskoy fabriki pervichnoy obrabotki shersti (for Vil'nina. 2. TSentral'nyy nauchno-issledovatel'skiy institut shersti (for Orlov).

(Woolen and worsted manufacture)

VIL'NITSKIY, M.B. [Vil'nits'kyi, M.B.], kand.filos.nauk; DYSHLEVYI, P., kand.filos.nauk

Lenin and natural science. Mauka i zhyttia 8 no.4:1-4 Ap '58.

(Lenin, Vladimir Il'ich, 1870-1924)

(Science)